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EXAMINER

TRAN, CON P

ART UNIT

PAPER NUMBER

2644

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/615,168

Applicant(s)

WHITE, DONALD R.

Examiner

Con P. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 2, and 13** are rejected under 35 U.S.C. 102(b) as being anticipated by Guan et al. (U.S. 5,099,519).

Regarding **claim 1**, Guan teaches (see Fig. 1, 2 and respective portions of the specification) a full duplex audio headset (12) comprising:

a first ear piece (26) having a microphone (30) configured to pickup voice signals of a headset operator output from an ear canal and convert the voice signals into electrical transmit signals and output the electrical transmit signals from the headset as an electrical representation of the voice signals of the headset operator (see col. 2, lines 50-63); and

a second ear piece (28) having an ear phone (32) for converting electrical receive signals received from an external device coupled to the audio headset into audio output sounds and outputting the audio output sounds into a different ear canal of the headset operator so that the headset operator can hear the audio output sounds (see col. 2, lines 64-66).

Regarding **claim 2**, Guan teaches (see Fig. 1 and respective portions of the specification) an audio headset (12) including an acoustical isolator (27) positioned within the first ear piece (26) for substantially isolating the microphone from audio signals attributed to bone conduction, the acoustical isolator comprising a piece of material extending inside the first earpiece and suspending the microphone inside the first ear piece (see col. 2, lines 50-63).

Regarding **claim 13**, Guan teaches (see Fig. 1, 2 and respective portions of the specification) a method for operating a full duplex headset (12), comprising:

adapting a first ear piece (26) for receiving audio signals from a voice of a user while located within a first ear of the user providing an audio talk source for the user (see col. 2, lines 50-63);

converting the received audio signals from the first ear piece (26) into transmit signals for outputting through a first connector as an audio output signal (see col. 2, lines 50-63);

adapting a second ear piece (28) for receiving receive signals through a second connector while located within a second ear of the user providing an audio listening source for the user (see col. 2, line 64 – col. 3, line 2); and

outputting the receive signals through a transducer (32) in the second ear piece (28) into the second ear of the user (see col. 2, line 64 – col. 3, line 2).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 3, 4, 12, 14, and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Guan et al. (U.S. 5,099,519) in view of Morrill et al. (U.S. 6,175,633).

Regarding **claim 3**, Guan teaches (see Fig. 1, 2 and respective portions of the specification) a full duplex audio headset (12) according to claim 2. However, Guan et al. reference does not explicitly specify the name of acoustical isolator surrounding sides of the microphone.

In the same field of endeavor, Morrill et al. teaches (see Fig. 1, 2 and respective portions of the specification) an acoustical isolator comprises a plastic material (i.e., medical grade silicon) having sides extending against inside walls of the first earpiece and a center portion surrounding sides of the microphone (see col. 2, lines 33-40) in order to provide sufficient attenuation to protect the person's hearing and to meet the safety standard (see col. 2, lines 46-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included within Guan reference an acoustical

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isolator comprises a plastic material (i.e., medical grade silicon) having sides extending against inside walls of the first earpiece and a center portion surrounding sides of the microphone (see col. 2, lines 33-40) as taught by Morrill since such combination would have provided sufficient attenuation to protect the person's hearing and to meet the safety standard as suggested by Morrill in column 2, lines 46-48.

Regarding **claim 4**, Morrill further teaches (see Fig. 1, 2 and respective portions of the specification) the first ear piece (12L) includes only a single microphone (22L) for locating in an external ear canal in a first ear of a user (see col. 2, lines 29-35), the first ear piece containing no other microphones or ear phones and the second ear piece includes only a single ear phone for locating in a second ear of the user, the second ear piece containing no other microphones or earphones (see col. 3, lines 8-27).

Regarding **claim 12**, Morrill further teaches (see Fig. 1, 2 and respective portions of the specification) the first ear piece (12L) and the second ear piece (12R) each include a housing (26) adapted to insert within an external ear canal of a user (see col. 2, lines 19-28), the microphone positioned within the housing for converting voice signals from the user into the transmit signals (see col. 2, lines 29-40).

Regarding **claim 14**, this claim merely reflects the method to the apparatus claim of claim 3 and is therefore rejected for the same reasons.

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Regarding **claim 21**, Guan teaches a method (see Fig. 1, 2 and respective portions of the specification) including:

locating only a single microphone (30) in the first earpiece (26) without providing any other microphones or earphones in the first earpiece (see col. 2, lines 50-63);

locating only a single earphone (32) in the second earpiece (28) without providing any other microphones or earphones in the second earpiece (see col. 2, lines 64-66).

However, Guan et al. reference does not explicitly disclose a method that including:

inserting the first and second ear piece into opposite external ear canals of the user; and

positioning the microphone within the first earpiece for converting voice signals within the inserted external ear canal into the transmit signals.

In the same field of endeavor, Morrill et al. teaches (see Fig. 1, 2 and respective portions of the specification) a method that including:

inserting the first and second ear piece (12L, 12R) into opposite external ear canals (27) of the user (see col. 2, lines 21-28 and col. 3, lines 26-28); and

positioning the microphone (24L) within the first earpiece (12L) for converting voice signals within the inserted external ear canal (27) into the transmit signals (see col. 3, lines 8-28).

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5. **Claims 5-7, 16 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Guan et al. (U.S. 5,099,519) in view of Ford (U.S. 5,118,309).

Regarding **claim 5**, Guan teaches a full duplex audio headset (12) according to claim 1. However, Guan et al. reference does not explicitly disclose an audio headset including:

- a first wire coupled from the microphone to a first ring connection for outputting the transmit signals;

- a second wire coupled from the earphone to a second tip connection for receiving the receive signals; and

- a third wire for coupling the microphone and the earphone to a ground connection.

In the same field of endeavor, Ford teaches (see Fig. 3, 5 and respective portions of the specification) an audio headset including:

- a first wire (51b) coupled from the microphone (108) to a first ring connection (48b) for outputting the transmit signals (see col. 3, lines 8-37);

- a second wire (51a) coupled from the earphone (107) to a second tip connection (48a) for receiving the received signals (see col. 3, lines 8-37); and

- a third wire (51d) for coupling the microphone and the earphone to a ground (48c) connection (see col. 3, lines 8-37) in order to achieve minimum paths (see col. 1, lines 54-55).



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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included within Guan reference an audio headset as taught by Ford in order to achieve minimum paths as suggested by Ford in column 1, lines 54-55.

Regarding **claim 6**, Ford further teaches (see Fig. 3, 5 and respective portions of the specification) the first (51b), second (51a) and third (51d) wires are contained within a single flexible cord (53; see col. 3, lines 8-11).

Regarding **claim 7**, Ford further teaches (see Fig. 3, 5 and respective portions of the specification) the first connection (48b), second connection (48a) and the ground connection (48c) each comprise separate connections on a plug connector (47; see col. 3, lines 8-11).

Regarding **claim 16**, this claim merely reflects the method to the apparatus claim of claim 5 and is therefore rejected for the same reasons.

Regarding **claim 17**, this claim merely reflects the method to the apparatus claim of claim 7 and is therefore rejected for the same reasons.

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6. **Claims 8, 9, 15, and 18-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Guan et al. (U.S. 5,099,519) in view of Lazarus et al. (Lazarus; U.S. 4,280,018).

Regarding to **claims 8**, Guan et al. teaches an audio headset according to claim 1. However, Guan et al. do not explicitly suggest the microphone is a piezoelectric transducer.

In another analogous art, Lazarus et al. teaches (see Fig. 1 and respective portions of the specification) the piezoelectric transducers (10) have been used to produce electrical transmit signals (see col.1, lines 5-15) from the audio input signals (see line 1, Abstract) because it is small and light (see col. 1, lines 50-52).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to have included within the Guan reference a microphone that includes a piezoelectric transducer as taught by Lazarus in order to generate the electrical transmit signals from the audio input signals because the piezoelectric transducer is small and light as suggested by Lazarus in column 1, lines 50-52.

Regarding to **claims 9**, Lazarus et al. further teaches (see Fig. 1 and respective portions of the specification) the transducer (10) including a FET transistor (Q1) in order to provide impedance matching. The transistor (Q1) having a first gating terminal coupled to a first terminal (18) of the transducer (12), a second output terminal (D) for

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outputting the transmitted signal, and a third terminal (S) for coupling to a ground connection.

Regarding **claim 15**, this claim merely reflects the method to the apparatus claim of claim 8 and is therefore rejected for the same reasons.

Regarding **claim 18**, Guan et al. teaches a method according to claim 13. However, Guan et al. do not explicitly suggest using an output of a piezo electric transducer in the first ear piece for generating the transmit signals.

In another analogous art, Lazarus et al. teaches (see Fig. 1 and respective portions of the specification) the piezoelectric transducers (10) have been used to produce electrical transmit signals (see col.1, lines 5-15) from the audio input signals (see line 1, Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to have included within the Guan reference a method that including using an output of a piezo electric transducer in the first ear piece for generating the transmit signals.

Regarding **claim 19**, Lazarus et al. further teaches a method of using the transmit signal output from the piezoelectric transducer for controlling a field-effect-transistor (FET) (see col. 1, lines 60-61) output (see col.2, lines 59-61) and using the transistor output as the transmit signals (col.2, lines 61-63).

Regarding **claim 20**, Lazarus et al. further teaches method including electrically filtering out low audio frequencies from the transmit signals (see col. 2 lines 45-48).

7. **Claims 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Guan et al. (U.S. 5,099,519) in view of Lazarus et al. (U.S. 4,280,018), and further in view of Morrill et al. (U.S. 6,175,633).

Regarding to **claims 10**, Guan and Lazarus further teach an audio headset in according to claim 9 including a filter circuit coupled across the second and third terminals of the transistor for filtering out low audio frequencies from the transmit signals. However, the Guan et al. reference and Lazarus et al. reference in combination does not disclose the filter including an inductor and a capacitor.

In the same field of endeavor, Morrill et al. teaches (see Fig. 3A and respective portions of the specification) a filter circuit including an inductor (L3) and a capacitor (C5; see col. 4, lines 44-50) in order to be able to hear the audible output from the transducers (see col. 3, lines 1-3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included within Guan reference a filter circuit including an inductor (L3) and a capacitor (C5; see col. 4, lines 44-50) as taught by Morrill since such combination would have ensured that the wearer can hear the audible output from the transducers as suggested by Morrill et al. in column 3, lines 1-3.

8. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Guan et al. in view of Kruger (U.S. 5,692,059).

Regarding to **claims 11**, Guan et al. teaches an audio headset according to claim 1. However, Guan et al. does not explicitly suggest the microphone comprises an electret.

In the same field of endeavor, Kruger teaches an in-the-ear microphone system (see Fig. 2) comprising an electret microphone (18) which is an airborne sensing transducer (see col. 5, lines 23-24) located in the housing (10) in form of an earplug (see col. 5, line 8).

Accordingly, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to include within the Guan reference a microphone that comprises an electret since such modification would have achieved a frequency response that emphasizes a higher speech frequencies as suggested by Kruger in column 5, lines 39-41.

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Con P. Tran whose telephone number is 703-305-2341. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are 703-

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872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service Office at telephone number 703-306-0377.

cpt CPT  
March 18, 2002

  
FORESTER W. ISEN  
SUPERVISORY PATENT EXAMINER  
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